

Amendments to the Claims

1-91. (canceled)

92. (currently amended) An automated, real-time electronic inventory system, comprising:

- (A) a plurality of radio frequency identification (RFID) tags, wherein each tag is assigned a first permanent identification number and a second permanent identification number, wherein said RFID tags are configured to receive and transmit signals; [[and]]
- (B) a tag reader having means for transmitting a signal to said RFID tags and means for resolving contention between multiple RFID tags that respond to said signal; and
- (C) wherein said RFID tags are configured to receive said signal from said reader, evaluate said first or second permanent identification numbers in response to receiving said signal, and reply to said signal if appropriate.

93. (previously presented) The electronic inventory of claim 92, wherein at least one of said plurality of RFID tags has a sensor; and means for transmitting the contents of said sensor.

94. (previously presented) The electronic inventory system of claim 92, wherein said signal is a clock signal, and said tag reader emits a series of clock signals, wherein each clock signal defines a time slot.

95. (previously presented) The electronic inventory system of claim 94, wherein each RFID tag counts said clock signals and when the count is equivalent to said first permanent identification number, transmits its reply to said tag reader.

96. (previously presented) The electronic inventory system of claim 95, wherein said tag reader accumulates said replies of each tag that responded.

97. (previously presented) The electronic inventory system of claim 96, wherein said tag reader polls all tags whose reply conflicted with another tag.

98. (previously presented) The electronic inventory of claim 92, wherein said first and second permanent identification numbers are a tag identification number (Tag ID) and a manufacturer number, wherein said signal is a clock signal, wherein each tag further comprises:

- means for receiving a wake-up signal followed by a first clock signal;

- means for incrementing a first tag count in response to said first clock signal;

- means for transmitting said Tag ID assigned to said tag when said Tag ID corresponds to said first tag count;

- means for receiving a second clock signal;

- means for incrementing a second tag count in response to said second clock signal; and

- means for transmitting said manufacturer number assigned to said tag when said manufacturer number of said tag corresponds to said second count.

99. (previously presented) The electronic inventory of claim 92, wherein said first and second permanent identification numbers are a tag identification number (Tag ID) and a manufacturer number, wherein said signal is a clock signal, wherein said tag reader comprises:

- means for transmitting a wake-up signal followed by a first clock signal;

- means for incrementing a first reader count in response to said first clock signal,

- means for receiving a Tag ID transmitted by a tag in response to said first clock signal;

- means for storing a given first reader count when more than one tag responds to said first clock signal that corresponds to said given first reader count;

- means for transmitting said given first reader count followed by a second clock signal; and

- means for receiving a manufacturer number transmitted by a tag in response to said second clock signal.

100. (canceled)

101. (currently amended) An automated, real-time electronic inventory system, comprising:

- (A) a plurality of radio frequency identification (RFID) tags, wherein each tag is assigned a plurality of identification numbers, wherein said RFID tags are configured to receive and transmit signals; [[and]]
- (B) a tag reader having means for transmitting a signal to said RFID tags and means for resolving contention between multiple RFID tags that respond to said signal; and
- (C) wherein said RFID tags are configured to receive said signal from said tag reader, evaluate one or more of said plurality of identification numbers, and reply to said signal if appropriate.

102. (previously presented) The electronic inventory system of claim 101, wherein said tag reader can initiate an immediate read of said RFID tags, a specific RFID tag read, or a timed broadcast read of said RFID tags.

103. (previously presented) The electronic inventory system of claim 101, wherein at least one of the plurality of RFID tags has a sensor.

104. (canceled)

105. (canceled)

106. (previously presented) A system for locating a tag, wherein each tag is assigned a first permanent identification number and a second permanent identification number, the system comprising:

a tag reader configured to transmit a first value corresponding to the first permanent identification number of a tag to be located and a second value corresponding to the second permanent identification number of a tag to be located ; and

a tag that transmits, in response to receiving said first value, the first permanent identification number assigned to said tag when the first permanent identification number assigned to said tag corresponds to said first value, wherein said tag further transmits, in response to receiving said second value, the second permanent identification number assigned to said tag when the second permanent identification number assigned to said tag corresponds to said second value.

107. (currently amended) A radio frequency identification tag, wherein each tag is assigned a first permanent identification number and a second permanent identification number, wherein the tag is interrogated by a tag reader having means for transmitting a first clock signal and for incrementing a first reader count in response to the first clock signal, means for storing the first reader count when more than one tag responds to the first clock signal that corresponds to the first reader count, and means for transmitting the stored first reader count followed by a second clock signal, the tag comprising:

means for incrementing a first tag count in response to the first clock signal,

[[and]]

means for transmitting the first permanent identification number assigned to the tag when the permanent identification number of the tag corresponds to said first tag count,

means for incrementing a second tag count in response to receiving the second clock signal, and

means for transmitting the second permanent identification number assigned to the tag when the second permanent identification number of the tag corresponds to said second tag count.

108. (currently amended) A method for conducting an inventory of tags, wherein each tag is assigned a first permanent identification number and a second permanent identification number, the method comprising the steps of:

at a tag reader, transmitting a first clock signal, waiting for a reply from a plurality of the tags, and transmitting a first reader count followed by a second clock signal; [[and]]

at each tag,

incrementing a first tag count in response to said first clock signal and
transmitting the first permanent identification number assigned to said tag
when the first permanent identification number of said tag corresponds to said
first tag count; and

at each tag that responds to said transmitted first reader count,
incrementing a second tag count in response to said second clock signal,
and

transmitting the second permanent identification number assigned to said
tag when the second permanent identification number of said tag corresponds to
said second tag count.

109. (currently amended) A method for conducting an electronic inventory of
radio frequency identification tags, the method comprising the steps of:

- (A) transmitting a first signal to a plurality of radio frequency identification
(RFID) tags, wherein each tag is assigned a first identification number and
a second identification number, wherein said RFID tags are configured to
receive and transmit signals; [[and]]
- (B) receiving a reply from said plurality of RFID tags, said tags responding to
said first signal based on the value of said first identification number; and
- (C) resolving contention between multiple RFID tags if there is a conflict
between at least two of said RFID tags subsequent to said RFID tags
responding to said first signal, including transmitting a second signal to
said plurality of RFID tags.

110. (previously presented) The method of claim 109, wherein at least one of said
RFID tags includes a sensor, the method further including receiving sensor data from at
least one RFID tag.

111. (previously presented) The method of claim 109, further comprising
receiving a reply to said second signal from at least one RFID tag based on the value of
said second identification number.

112. (previously presented) The electronic inventory system of claim 92, wherein at least one of said plurality of RFID tags is manufactured on a flexible substrate.

113. (previously presented) The electronic inventory system of claim 101, wherein at least one of said plurality of RFID tags is manufactured on a flexible substrate.

114. (previously presented) The system of claim 106, wherein said tag includes a sensor.

115. (previously presented) The system of claim 106, wherein said tag is manufactured on a flexible substrate.

116. (previously presented) The tag of claim 107, wherein the tag further includes a sensor.

117. (previously presented) The tag of claim 107, wherein the tag is manufactured on a flexible substrate.

118 - 157. (canceled)

158. (previously presented) The system of claim 92, wherein said tag reader includes a PCMCIA card that is configured for a specific application.

159.(previously presented) The system of claim 101, wherein said tag reader includes a PCMCIA card that is configured for a specific application.

160. (previously presented) The system of claim 106, wherein said tag reader includes a PCMCIA card that is configured for a specific application.